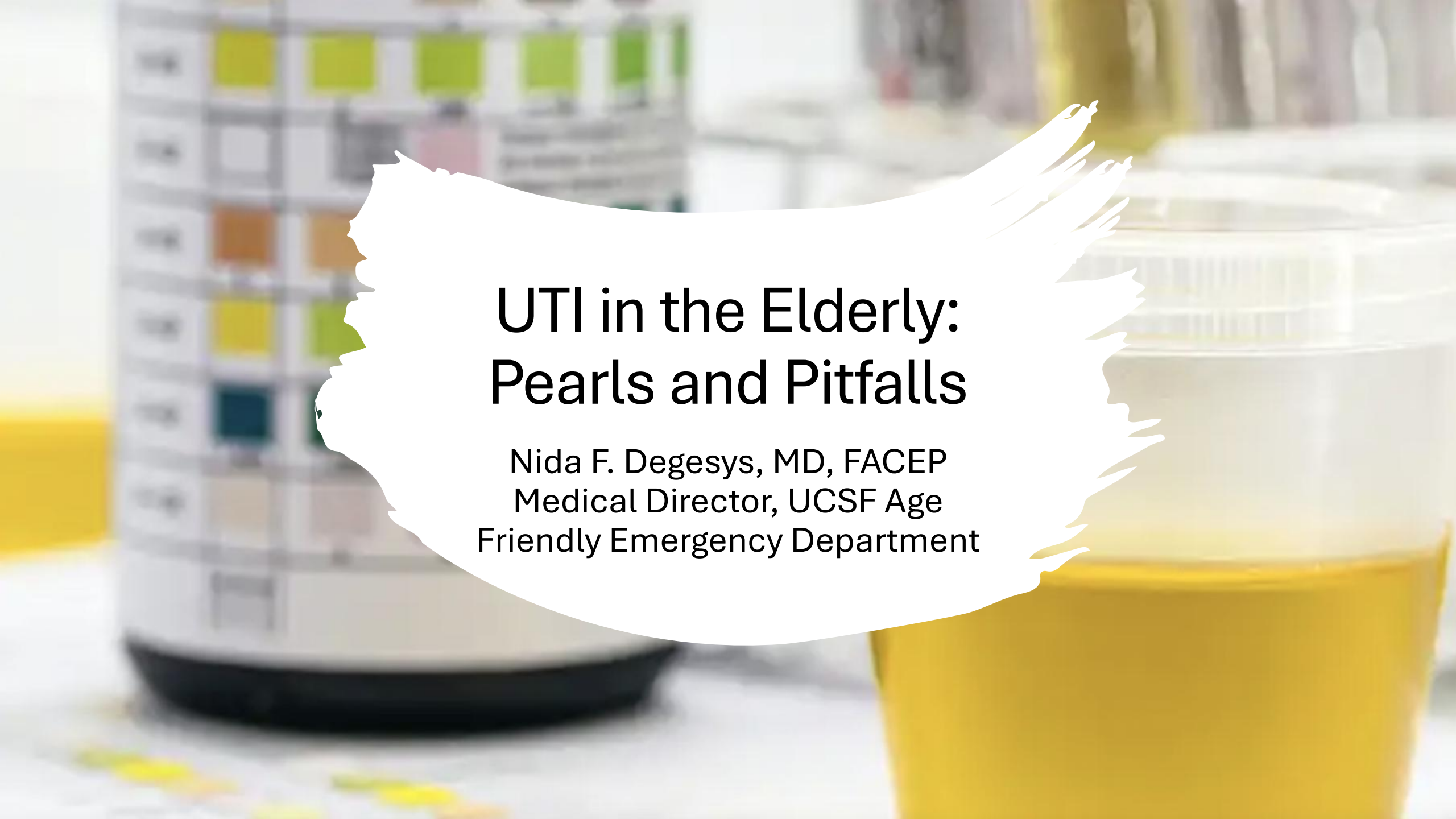

# UTI in the Elderly: Pearls and Pitfalls

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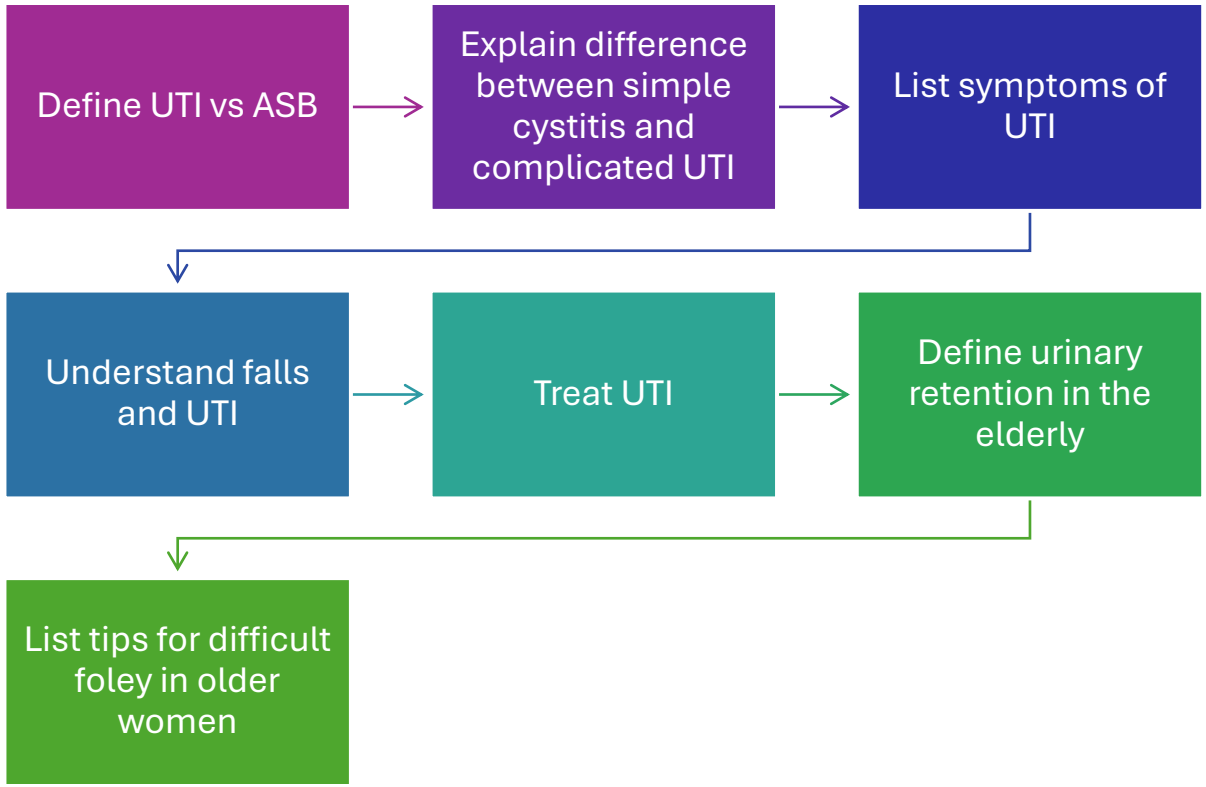
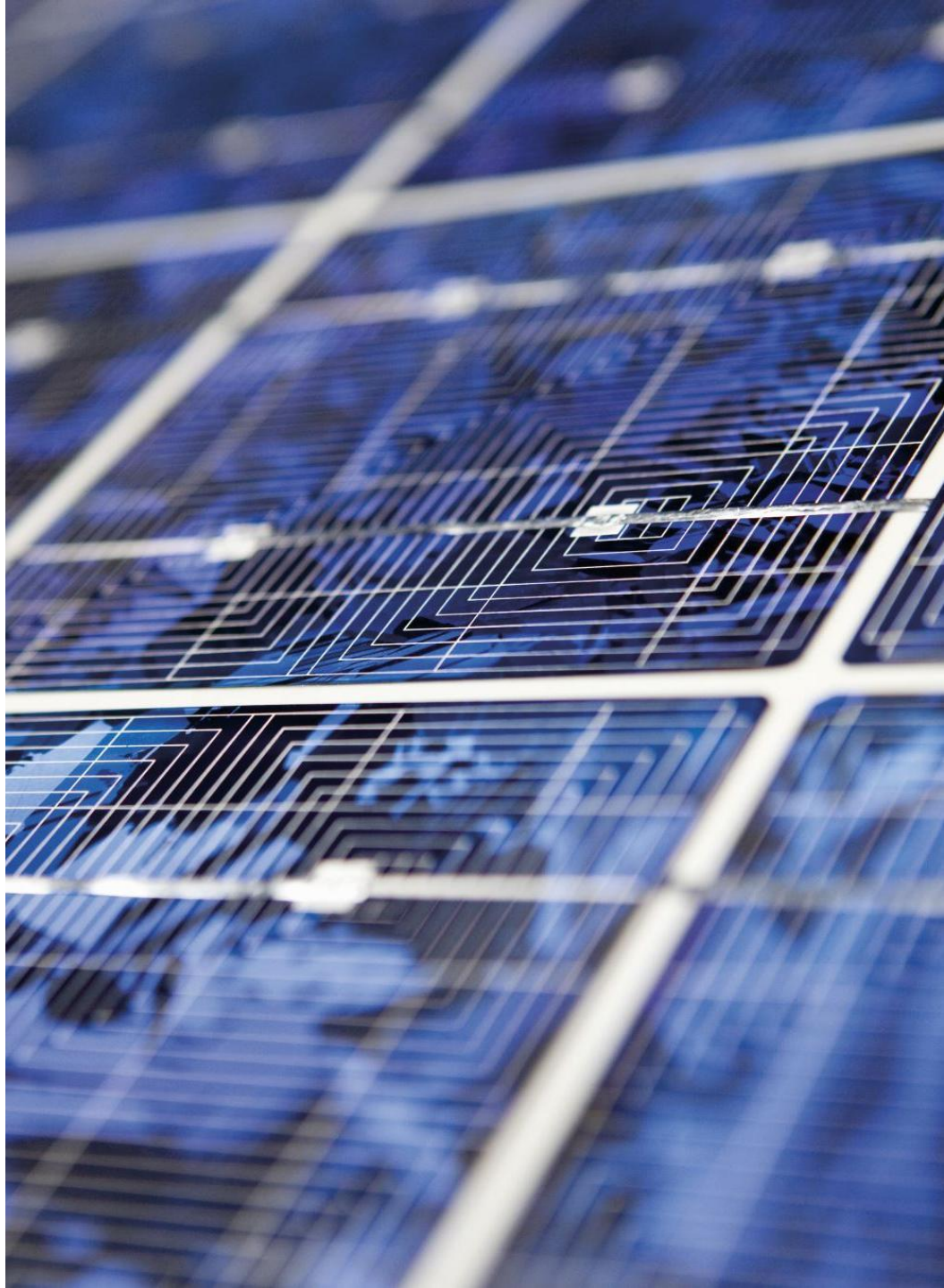
# COI

age friendly research

Ray & Dagmar Dolby Family Fund

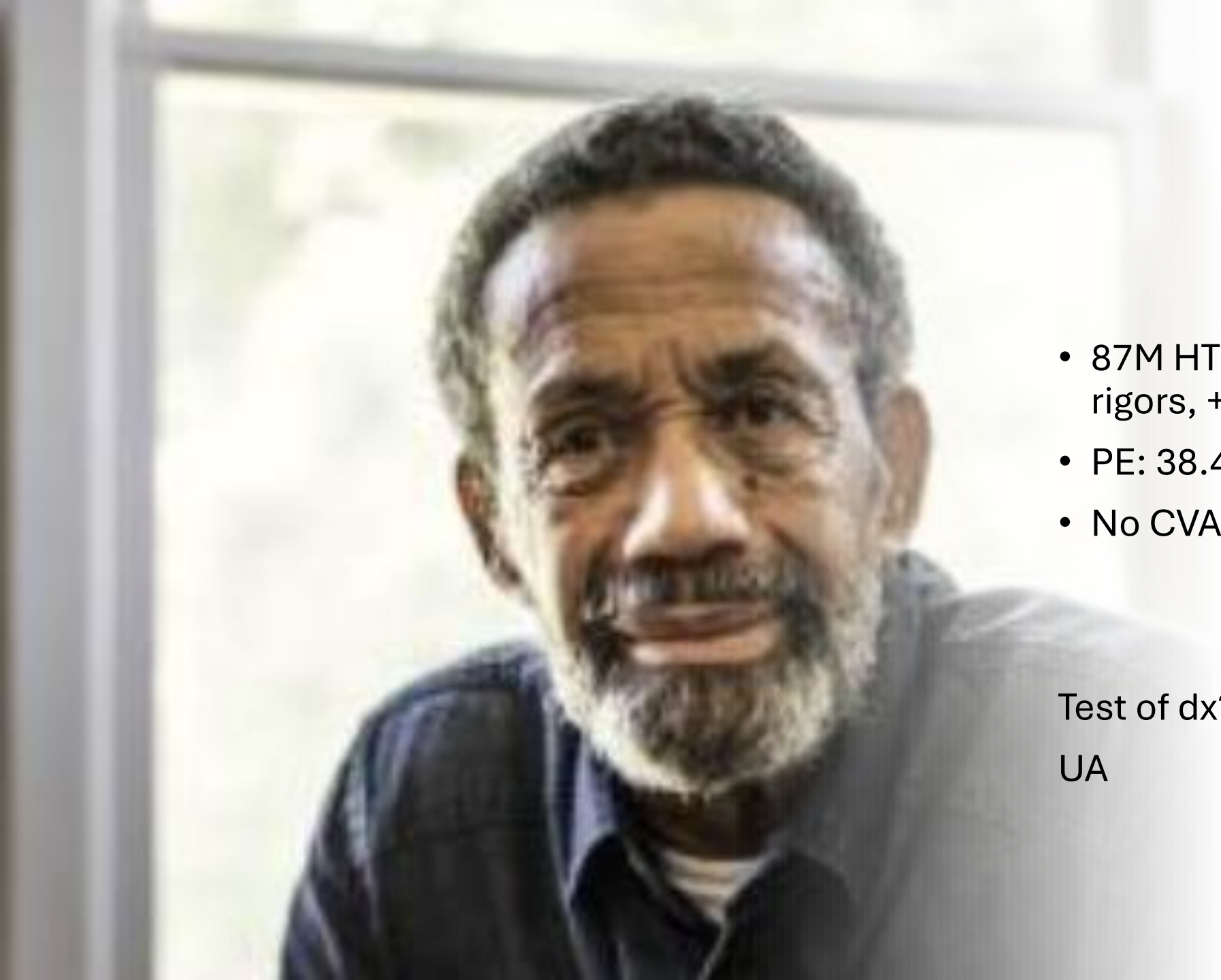
# ILOs


Define UTI vs ASB
Explain difference between simple cystitis and complicated UTI
List symptoms of UTI
Understand falls and UTI
Treat UTI
Define urinary retention in the elderly
List tips for difficult foley in older women



# Why older adults?

- Lots of ED visits
- 25% of all geri infections
- More sepsis



# Case

- 87M HTN, HL, BPH, BIB self, fevers, rigors, +urgency.
- PE: 38.4, 110, 125/90, 100%
- No CVA TTP, mild suprapubic ttp

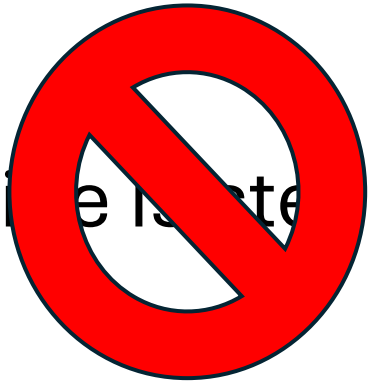
Test of dx?

UA

# Urine and UA: basic definitions

- 100-100,00 CFU/ml = Bacteriuria
(as opposed to contamination)

- WBC 5-10/hpf = Pyuria
(Pyuria can be sterile )



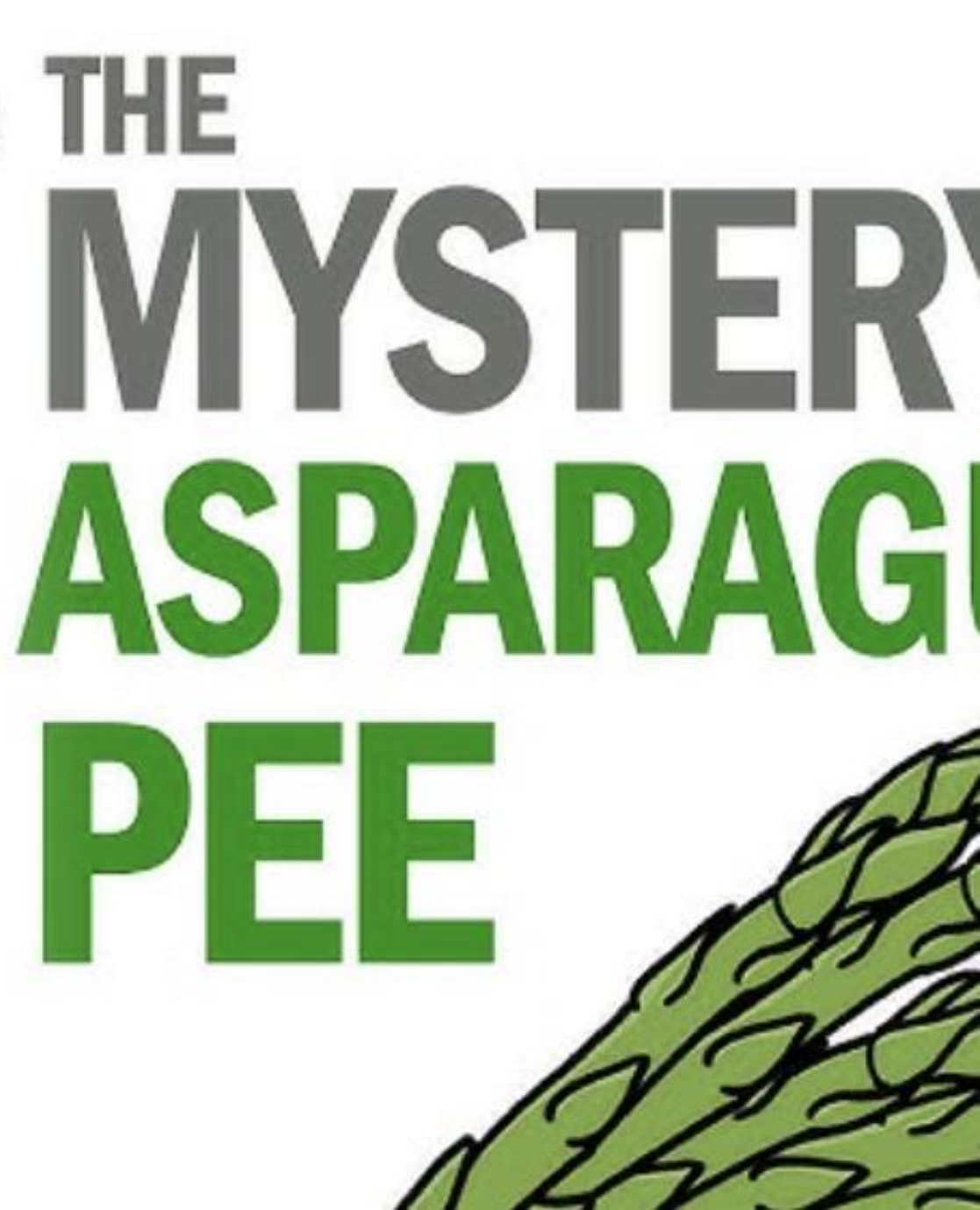
Urine is sterile

# UTI

- Symptoms +
  - $\geq 10^5$ colony forming units of bacteria per milliliter (CFU/ml)
- *Or for us in the ED:*
  - pyuria (>10 white blood cells/$mm^3$ per high-power field); or
  - +nitrites

# Symptoms (new or worsening)

- Dysuria
- Frequency
- Hematuria
- Urgency
- Incontinence
- Suprapubic pain/tenderness
- Feeling of incomplete bladder emptying
- Flank pain
- ???Foul smelling or cloudy urine???



# Older ppl sx?

- Non-localizing sx
- Fever
- AMS/Delirium
    - "confusion"

# Simple vs Complicated

- Acute UTI **confined** to the bladder
- NO systemic symptoms
- NO flank pain/tenderness.

- Acute UTI w/ s/s suggest **extension** beyond the bladder
  - fever/rigors
  - flank pain/CVA TTP
  - vomiting

# Treatment

## Simple

- **Nitrofurantoin** 100 mg PO BID x 5 days (avoid if CrCl < 30 mL/min)
- **OR**
- **Cephalexin** 500 mg PO BID x 5-7 days

*Reserve for patients at highest risk of failure (selection for resistant isolates):*

- **Ciprofloxacin** 500mg PO q12h x 3 days
- **Fosfomycin**
- **Trimethoprim/ Sulfamethoxazole** 1 DS PO BID x 3 days (if no previous antibiotic therapy)

## Complicated

- **Ceftriaxone** X 1 dose

*Followed by*

- **TMP/SMX (trimethoprim/sulfamethoxazole)**
- **OR**
- **Ciprofloxacin** (preferred as monotherapy if ceftriaxone not available)

# Case

- 92F PMHx MCI, HTN, here from SNF with +UA after aid noted foul smelling urine in diaper. Denies abd pain, denies urgency/frequency, denies fevers.
- 37.2, 80, 137/94, 100%
- PE: axo2 (baseline), no CVA TTP, no abd ttp, +diaper

# Asymptomatic Bacteruria (ASB)

- ≥$10^5$ CFU/ml or +UCx
- W/ or w/o pyuria
- No sx of UTI

# ASB in Elderly

**Incidence increases w age**

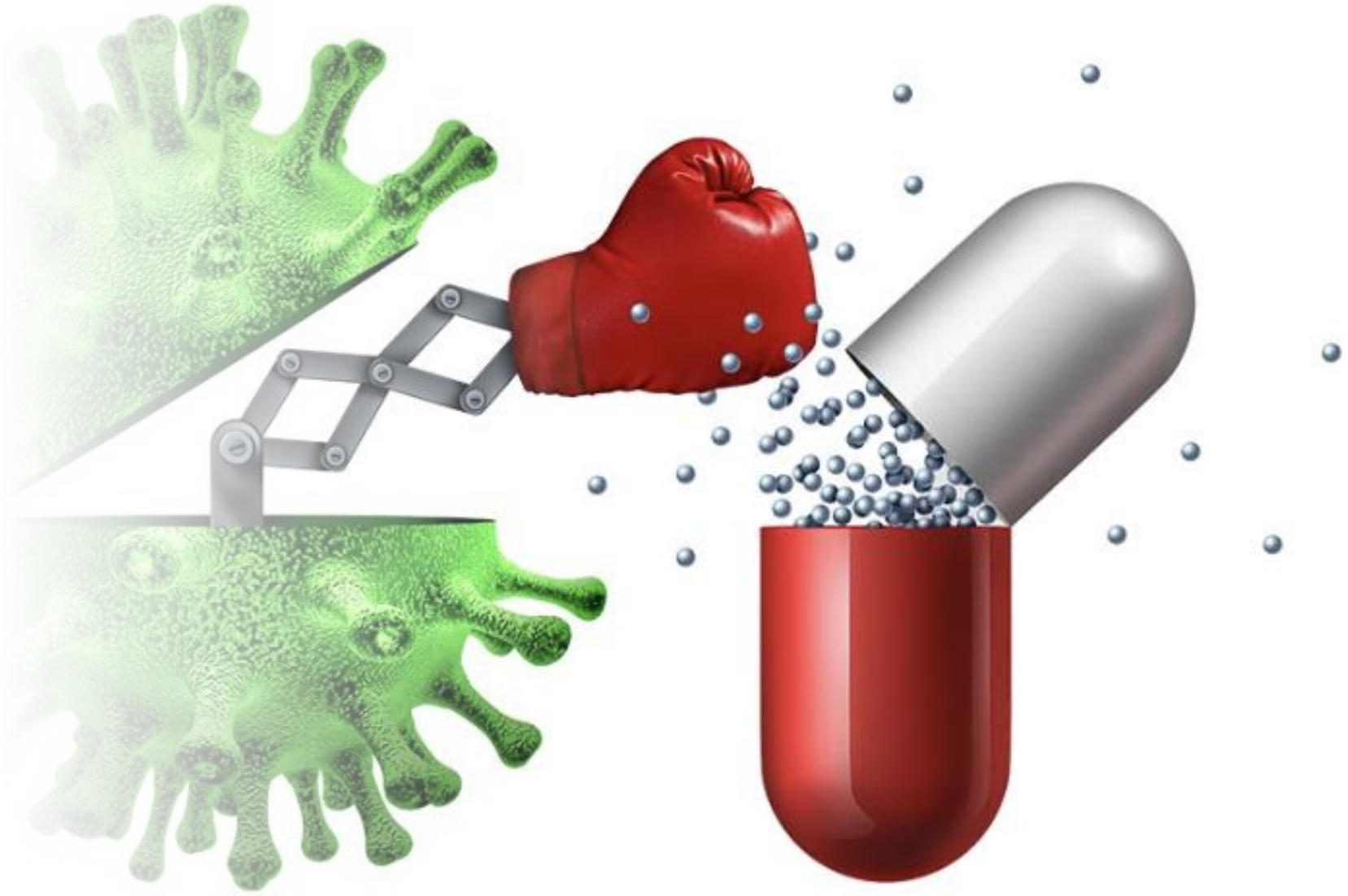
- 3.5% in general female population
- 16%-18% by 70
- As high as 50% in advanced age
- Male rates half of female rates

**20% in community, 25-50% nursing home (1), up to 80% frail women (4)**

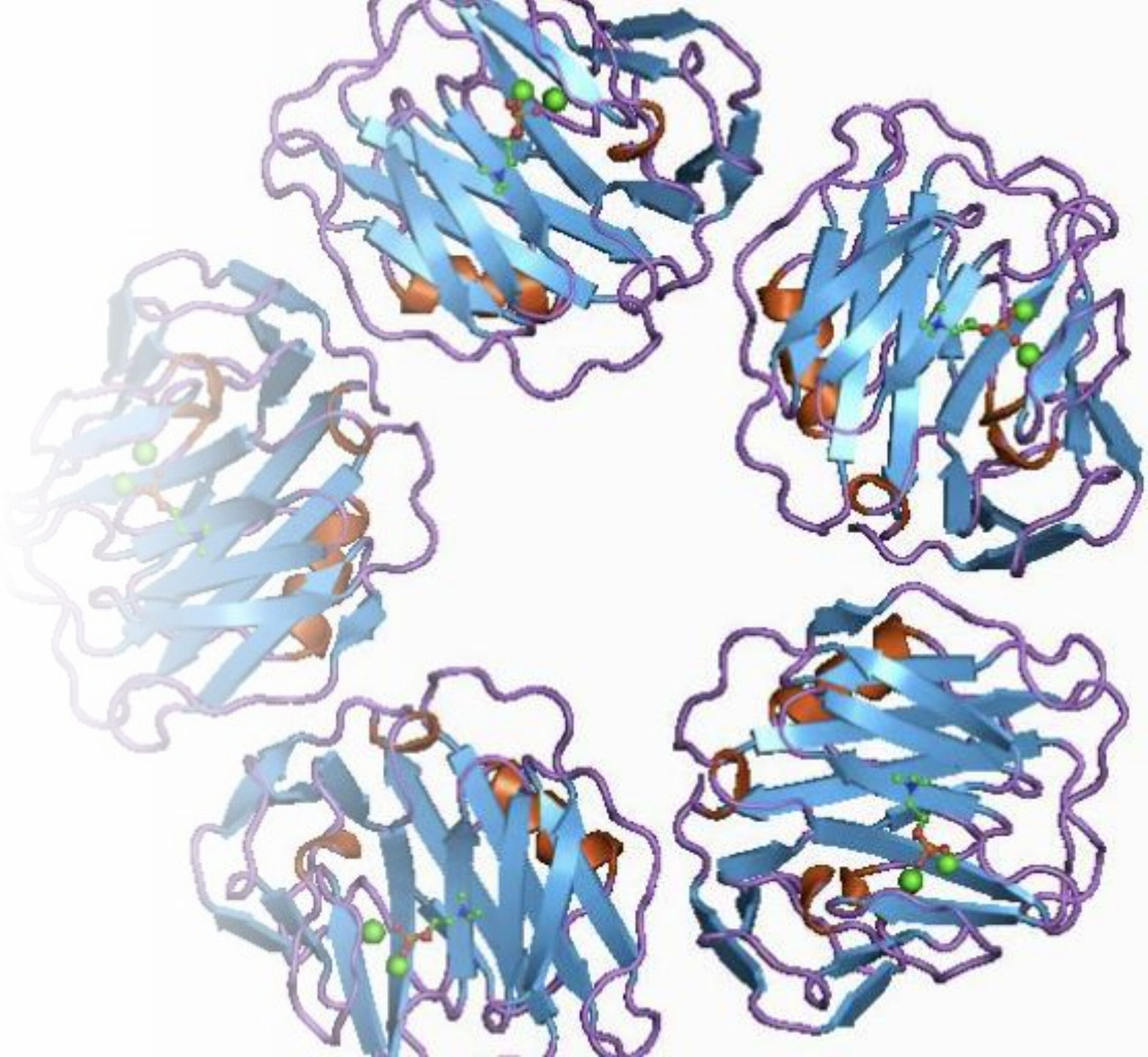
- Catheters
- Hx of UTIs
- Decreased estrogen
- Prostate obstruction

# ASB in Elderly

- B9 (usually)
- No inc mortality (2)
- Abx->
  - resistance (3),
  - harm (5)



CRP?



# Case

- 79F PMHx osteoporosis, breast CA remission, BIBS after GLF.  Tripped on the curb, falling forward. No AC, No LOC, ambulated after.  C/o R knee and R wrist pain.
- PE: 37.0, 120/80, 68, 100%
- No head trauma, +ecchymosis to R wrist, and abrasion to R knee
- Plan:
  - trauma workup (CTs, XRs, etc)
  - Medical workup: labs, UA?

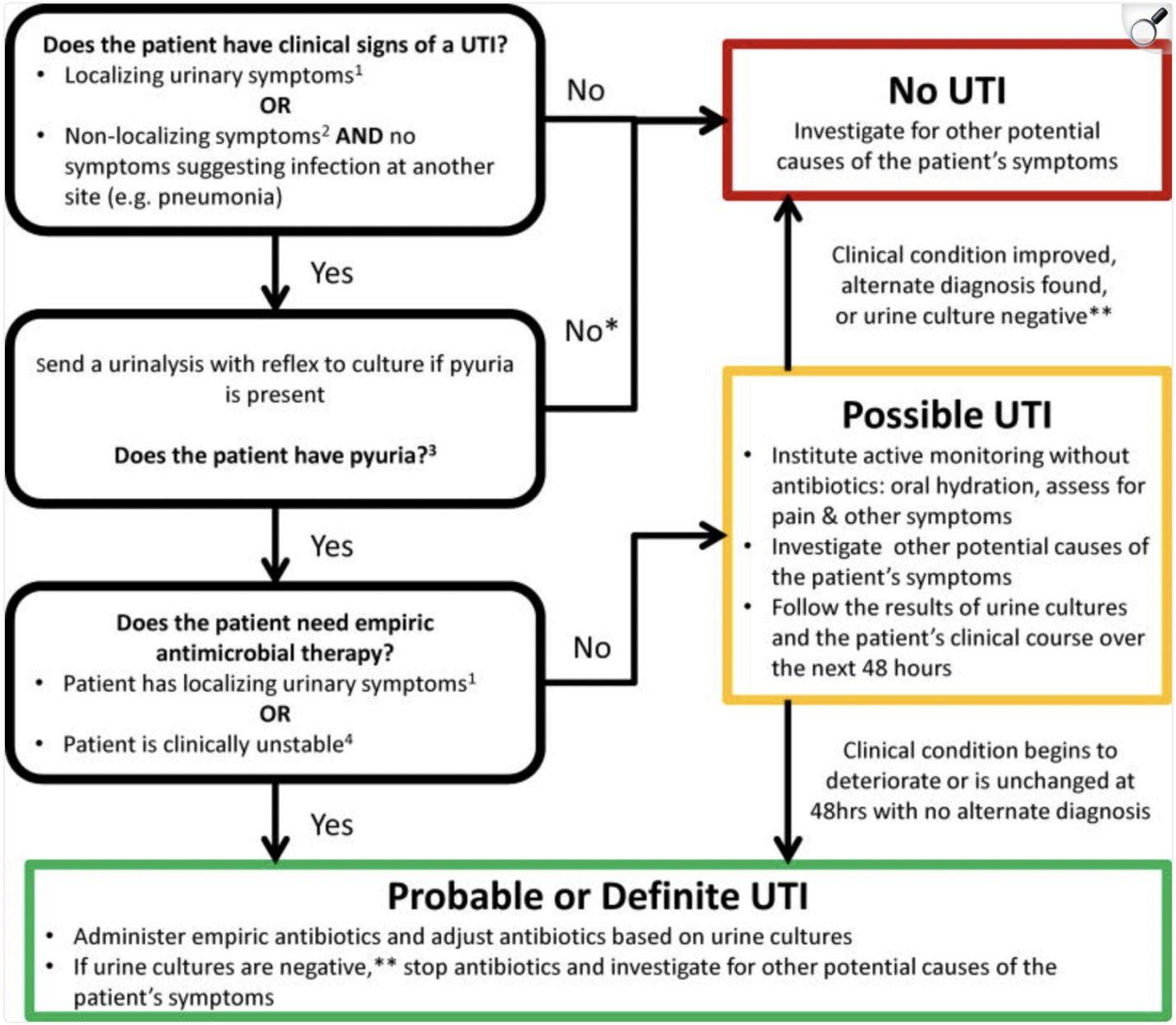
- Fall is not a sx of UTI
- Caveats:
  - no ams,
  - no fevers,
  - no other UTI sx

# Case

- 87F HTN, HL, BIB self, fevers, dysuria, +urgency.
- PE: 37.4, 80, 125/90, 100%
- No CVA TTP, mild suprapubic ttp

- UA, neg,no pyuria…

- STI? Atrophic vaginitis? Acute urethral syndrome?
- Repeat UA, UCx

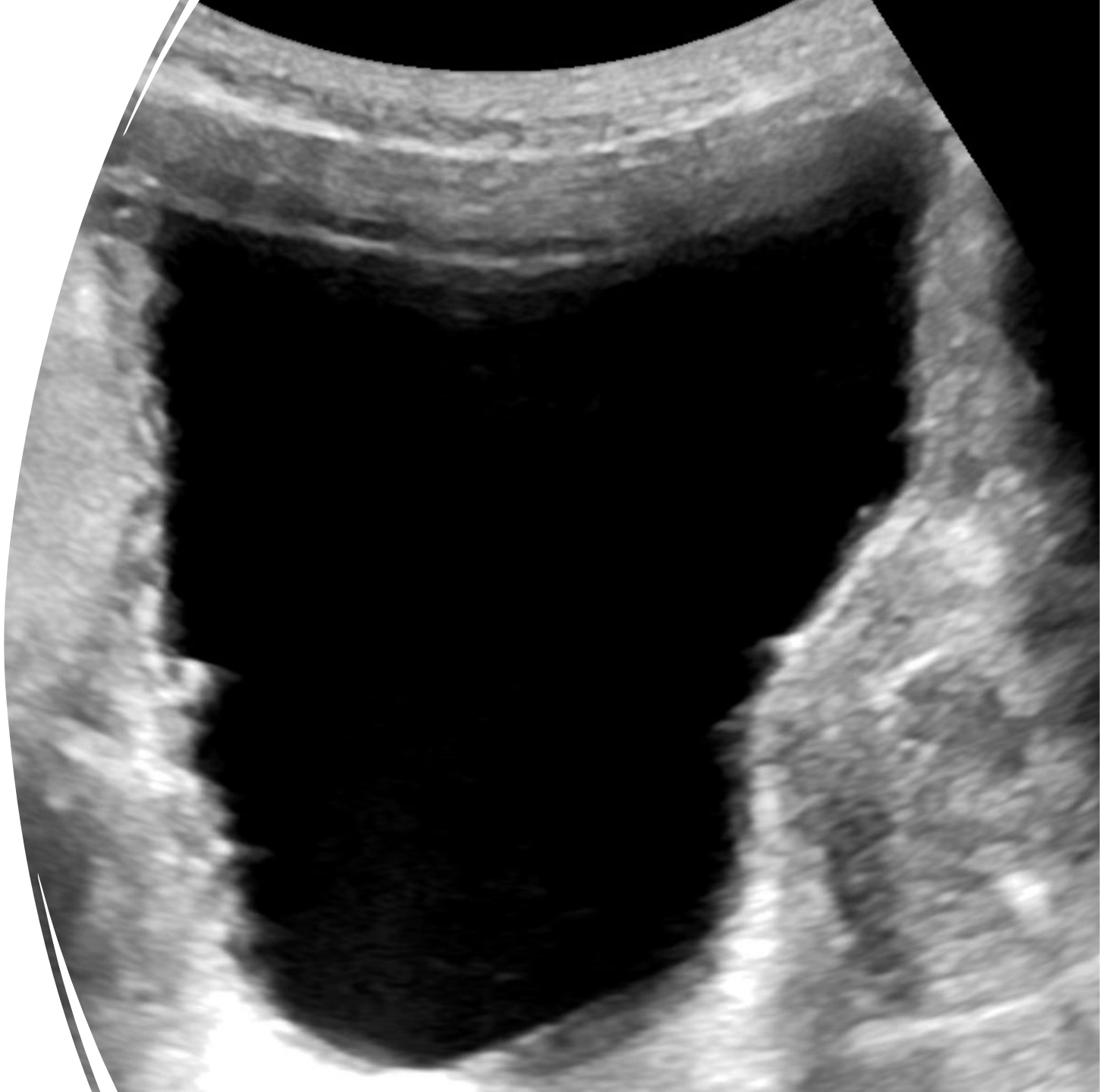



1 dysuria, frequency, suprapubic pain, gross hematuria, cva ttp, new/worsening urgency or urinary incontinence
2 fever, rigors, or clear cut delirium
3 >10WBCs per high power field on microscopy or positive leukocyte esterase
4 fever, sepsis (abnormal SIRS or qSOFA) or acute illness requiring ICU care
*UTI can still be considered in patients with neutropenia or other conditions that might cause the absence of pyuria
**Urine cultures may be negative if obtained after the patient has received antibiotics; in such cases, stop antibiotics specifically for UTI if the patient's clinical condition is not improving

# Case

- 78F PMHx seasonal allergies, DM2, p/w mild suprapubic pressure and feeling like she can't empty her bladder.
- PE: 37.0, 112/80, 65, 100%
- +mild suprapubic ttp, no cvattp

POCUS: PVR 650



# Urinary Retention

## More common in men

- Anatomic and physiologic factors

## Elevated residual?

- Many geriatric patients live with 200-300cc+ residuals
- Able to void, no sx, likely chronic

Causes

## Outlet obstruction

- Pelvic mass
- Pelvic organ prolapse
- Urethral stricture (rare)
- Severe constipation/fecal impaction
- Hematuria with clot retention

## Bladder dysfunction

- Medications*
- Diminished sensation
- Back/spinal issues

**Table 3: Medications Impacting Continence**

| Medication Class | Examples | Potential Impact on Continence |
|---|---|---|
| Sedatives | Long-acting benzodiazepines (e.g. diazepam, flurazepam) | Sedation, delirium, immobility |
| Alcohol | | Polyuria, frequency, urgency, sedation, delirium, immobility |
| Anticholinergics | Dicyclomine, disopyramide, sedating antihistamines (e.g. diphenhydramine) | Urinary retention, constipation, delirium |
| Medications with anticholinergic effects | | |
| Antipsychotics | Thioridazine, haloperidol | Anticholinergic effects, sedation, rigidity, immobility |
| Antidepressants (tricyclic) | Amitriptyline, nortriptyline, desipramine | Anticholinergic effects, sedation |
| Anti-Parkinsonian | Trihexyphenidyl, benztropine mesylate (not L-dopa or selegiline) | Anticholinergic effects, sedation |
| Narcotics | Opiates | Urinary retention, constipation, sedation, delirium |
| Alpha-adrenergic antagonists | Prazosin, terazosin, doxazosin | Urethral relaxation may exacerbate stress incontinence in women |
| Alpha-adrenergic agonists | Nasal decongestants (e.g. pseudoephedrine, phenylephrine) | Urinary retention in men |
| Calcium channel blockers | Dihydropyridines (e.g. amlodipine, nifedipine, nicardipine) | Urinary retention; increased nocturnal urinary output from fluid retention |
| Diuretics | Furosemide, bumetanide (not thiazides) | Polyuria, frequency, urgency |
| NSAIDs | Indomethacin, COX-2 inhibitors | Increased nocturnal urinary output due to fluid retention |
| Thiazolidinediones | Rosiglitazone, pioglitazone | Increased nocturnal urinary output due to fluid retention |
| Anticonvulsants/analgesics | Gabapentin, pregabalin | Increased nocturnal urinary output due to fluid retention |
| Parkinson agents (select) | Pramipexole, ropinirole | Increased nocturnal urinary output due to fluid retention |
| ACE-inhibitors | Captopril, enalapril, lisinopril | Drug-induced cough worsening stress incontinence |
| Certain chemotherapy agents | Platinum-based, taxanes, epothilones | Urinary retention from neuropathy |

References 19, 20

View Image



Source: AUA Core Curriculum

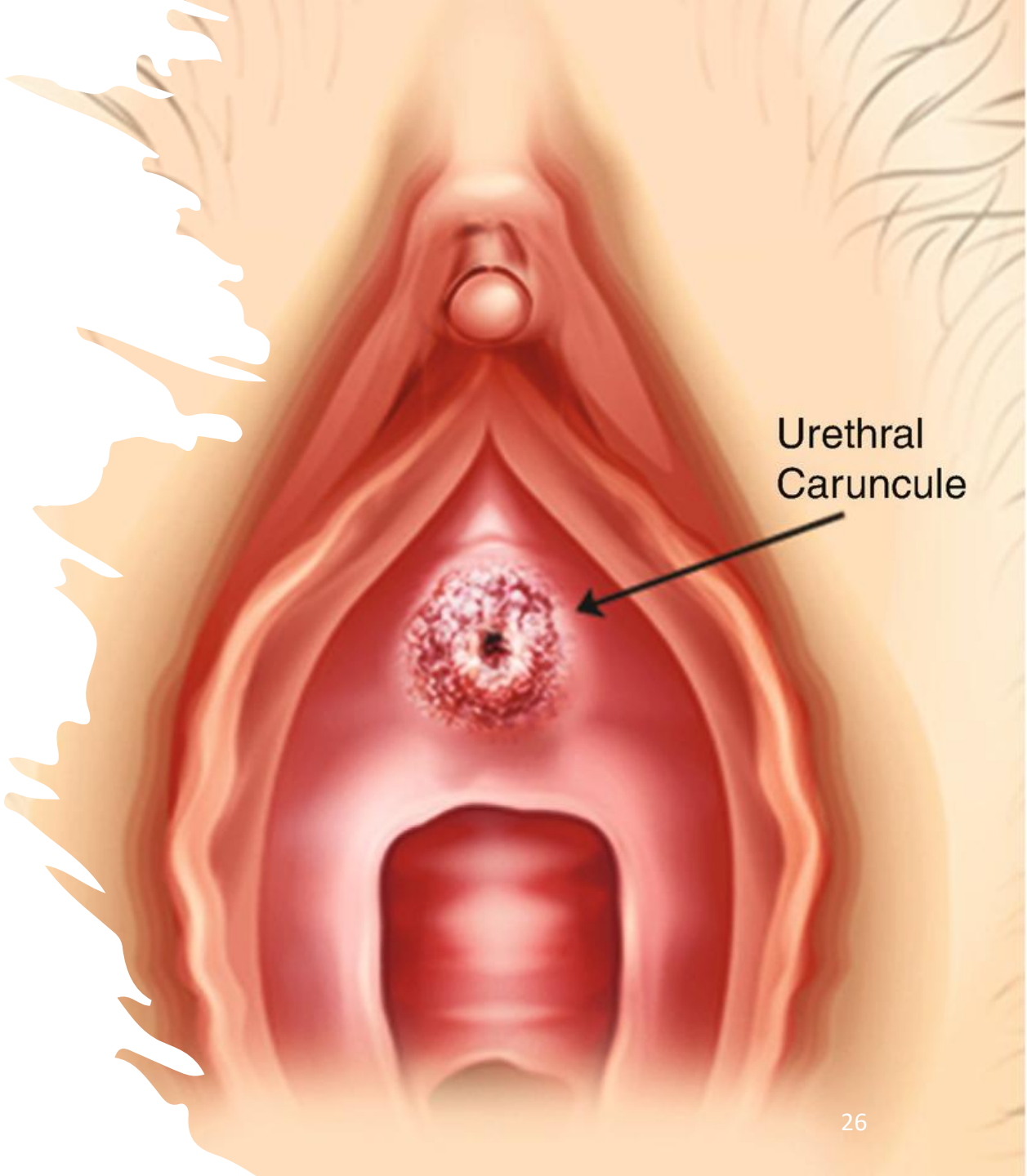
# Treatment

- Foley
  - Voiding trial 1-2 weeks
- Treat underlying cause (constipation, etc)
- Alpha blockers?
  - Mixed data for geriatric women

# Difficult foley in women

- Female urethra is 3-4cm in length
- True stricture is rare

- Most common reasons:
  - Atrophy
  - Obesity
  - Kinking of urethra due to prolapse



# Difficult Foley: Tips and Tricks

| Reduce | Extra Hands | Index Finger | Go Small |
| --- | --- | --- | --- |
| Make sure prolapse is reduced and urethra is straight | If obese or redundant tissue, get an extra set of hands to help retract! | If difficulty visualizing the meatus, place index finger of opposite hand in the vagina and slide catheter anterior to your finger | Try a smaller catheter (e.g. 12 or 14F) if significant atrophy present |

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